

ABSTRACT

Separation apparatus and method for separating magnetic and/or magnetically-labeled particles from a test medium.

Test medium within a reaction chamber is caused to flow past a collecting surface, and a high-gradient magnetic field is applied to the surface to capture magnetically responsive particles in the test medium. The particles are deflected toward the collection surface by baffles, a spinner, or a sprayer, or are funneled past the surface by a plunger operable to be displaced into close proximity to the surface to provide a narrow flow path for the particle-laden test medium. The particles normally suspended in the medium are separated out of suspension by adhesion to the collection surface. The particles may be resuspended by removal of the surface from the high-gradient field, or removal of the high-gradient field from the surface. The collection surface is a thin-walled non-magnetic material having a plurality of magnetic pole faces positioned therearound.